

5400S INSTALLATION MANUAL
Version 1.0f

5400S Dealer Install Manual

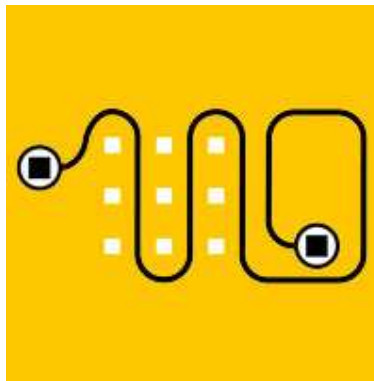


TABLE OF CONTENTS

TABLE OF FIGURES	6
1.0 INTRODUCTION	7
1.0 INTRODUCTION	7
1.1 GENERAL INFORMATION	7
2.0 JOHN DEERE 9000 SERIES 4WD	7
2.1 DESCRIPTION.....	7
2.2 HYDRAULIC DIAGRAM	8
2.3 FITTINGS LIST	8
2.4 KIT NUMBER	8
2.5 ILLUSTRATIONS	8
3.0 JOHN DEERE 8000 SERIES FWA	10
3.1 DESCRIPTION.....	10
3.2 HYDRAULIC DIAGRAM	10
3.3 FITTINGS LIST	11
3.4 KIT NUMBER	11
3.5 ILLUSTRATIONS	11
4.0 JOHN DEERE 4700 SP SPRAYERS	11
4.1 DESCRIPTION.....	11
4.2 HYDRAULIC DIAGRAM	11
4.3 FITTINGS LIST	12
4.4 KIT NUMBER	12
4.5 ILLUSTRATIONS	12
5.0 JOHN DEERE 9000 SERIES HARVESTERS	12
5.1 DESCRIPTION.....	12
5.2 HYDRAULIC DIAGRAM	12
5.3 FITTINGS LIST	13
<i>Orbitrol fittings</i>	13
<i>Steering Valve ports</i>	13
<i>Flow control valve</i>	13
5.4 KIT NUMBER	13
5.5 ILLUSTRATIONS	14
6.0 CASE STX 4WD	14
6.1 DESCRIPTION.....	14
6.2 HYDRAULIC DIAGRAM	14
6.3 FITTINGS LIST	15
<i>Orbitrol fittings</i>	15
<i>Steering Valve ports</i>	15
6.4 KIT NUMBER	15
6.5 ILLUSTRATIONS	15
7.0 CASE MX SERIES FWA	16
7.1 DESCRIPTION.....	16
7.2 HYDRAULIC DIAGRAM	16
7.3 FITTINGS LIST	17

7.4 KIT NUMBER	17
7.5 ILLUSTRATIONS	17
8.0 CASE CVX SERIES FWA.....	17
8.1 DESCRIPTION	17
8.2 HYDRAULIC DIAGRAM	18
8.3 FITTINGS LIST	18
8.4 KIT NUMBER	18
8.5 ILLUSTRATIONS	18
9.0 CASE SPX SELF PROPELLED SPRAYER	19
9.1 DESCRIPTION	19
9.2 HYDRAULIC DIAGRAM	20
9.3 FITTINGS LIST	20
9.4 KIT NUMBER	20
9.5 ILLUSTRATIONS	20
10.0 2300 SERIES HARVESTERS.....	20
10.1 DESCRIPTION	20
10.2 HYDRAULIC DIAGRAM.....	20
10.3 FITTINGS LIST	21
<i>Orbitrol fittings.....</i>	<i>21</i>
<i>Steering Valve ports.....</i>	<i>21</i>
10.4 KIT NUMBER	21
10.5 ILLUSTRATIONS	21
11.0 CASE AFX HARVESTERS	22
11.1 DESCRIPTION	22
11.2 HYDRAULIC DIAGRAM.....	22
11.3 FITTINGS LIST	23
<i>Orbitrol fittings.....</i>	<i>23</i>
<i>Steering Valve ports.....</i>	<i>23</i>
11.4 KIT NUMBER	23
11.5 ILLUSTRATIONS	23
12.0 NEW HOLLAND TJ SERIES 4WD.....	23
12.1 DESCRIPTION	23
12.2 HYDRAULIC DIAGRAM.....	23
12.3 FITTINGS LIST	24
<i>Orbitrol fittings.....</i>	<i>24</i>
<i>Steering Valve ports.....</i>	<i>24</i>
12.4 KIT NUMBER	24
12.5 ILLUSTRATIONS	24
13.0 NEW HOLLAND TG SERIES FWA	24
13.1 DESCRIPTION	24
13.2 HYDRAULIC DIAGRAM.....	24
13.3 FITTINGS LIST	24
13.4 ILLUSTRATIONS	25
14.0 NEW HOLLAND TM SERIES FWA.....	25

14.1 DESCRIPTION	25
14.2 HYDRAULIC DIAGRAM.....	25
14.3 FITTINGS LIST	25
14.4 ILLUSTRATIONS	25
15.0 NEW HOLLAND TR SERIES HARVESTERS	25
15.1 DESCRIPTION	25
15.2 HYDRAULIC DIAGRAM.....	25
15.3 FITTINGS LIST	26
<i>Orbitrol fittings</i>	26
<i>Steering Valve ports</i>	26
<i>Flow Control Valve</i>	26
15.4 KIT NUMBER	26
15.5 ILLUSTRATIONS	26
16.0 FENDT 900 SERIES.....	27
16.1 DESCRIPTION	27
16.2 HYDRAULIC DIAGRAM.....	27
16.3 FITTINGS LIST	27
16.4 KIT NUMBER	27
16.5 ILLUSTRATIONS	27
17.0 NITRO SP SPRAYERS.....	29
17.1 DESCRIPTION	29
17.2 HYDRAULIC DIAGRAM.....	29
17.3 FITTINGS LIST	30
17.4 KIT NUMBER	30
17.5 ILLUSTRATIONS	30
16.0 HARDI ALPHA.....	31
18.1 DESCRIPTION	31
18.2 HYDRAULIC DIAGRAM.....	31
18.3 FITTINGS LIST	32
18.4 KIT NUMBER	32
18.5 ILLUSTRATIONS	32
19.0 AGCO GLEANER HARVESTERS	33
19.1 DESCRIPTION	33
19.2 HYDRAULIC DIAGRAM.....	33
19.3 FITTINGS LIST	33
<i>Orbitrol fittings</i>	33
<i>Sense line</i>	33
<i>Steering Valve ports</i>	33
19.4 KIT NUMBER	33
19.5 ILLUSTRATIONS	34
20.0 WALKER SPRAYERS	34
20.1 DESCRIPTION.....	34

20.2 HYDRAULIC DIAGRAM.....	34
20.3 FITTINGS LIST	34
20.4 KIT NUMBER	34
20.5 ILLUSTRATIONS	34
21.0 JCB TRACTORS	35
21.1 DESCRIPTION.....	35
21.2 HYDRAULIC DIAGRAM.....	35
21.3 FITTINGS LIST	35
21.4 ILLUSTRATIONS	35
22.0 JOHN DEERE 7000/20 SERIES FWA.....	36
22.1 DESCRIPTION.....	36
22.2 HYDRAULIC DIAGRAM.....	36
22.3 FITTINGS LIST	37
22.4 KIT NUMBER	37
22.5 ILLUSTRATIONS	37
23.0 NEW HOLLAND CR SERIES HARVESTERS	40
23.1 DESCRIPTION.....	40
23.2 HYDRAULIC DIAGRAM.....	40
23.3 FITTINGS LIST	40
<i>Orbitrol fittings.....</i>	<i>40</i>
<i>Steering Valve ports.....</i>	<i>41</i>
23.4 KIT NUMBER	41
23.4 ILLUSTRATIONS	41
24 SAFETY AND TRAINING.....	41
25 SUPPORT.....	42

TABLE OF FIGURES

Figure 1-JD 9000 Series	8
Figure 2-Valve mounted in articulation point	9
Figure 3- Showing "Tee's" into hoses for pressure and tank.....	9
Figure 4- Another Showing "Tee's" into hoses for pressure and tank.....	10
Figure 5- Teeing into the steering rams	10
Figure - JD FWA	11
Figure -John Deere SP Sprayers	12
Figure -John Deere 9000 Series Harvesters	13
Figure -Case STX 4WD	15
Figure - Case STX 4WD	15
Figure - Valve mounting STX under bonnet	16
Figure -Case MX 4WD	17
Figure -Case CVX FWA	18
Figure-Case CVX with lockout Valve	19
Figure-Case CVX with lockout Valve	19
Figure -Case SPX Sprayer	20
Figure -Case 2300 harvester	21
Figure-Case 2300 series	22
Figure- Case AFX	22
Figure- TJ series 4WD	24
Figure-TJ series	24
Figure-New Holland TR	26
Figure - Fendt System	27
Figure-Pressure and flow from under tractor	28
Figure - Left and right to the lockout valve	28
Figure- Steering and lockout valve in behind tractor hydraulics cover. RHS of tractor.....	29
Figure- Load sense	29
Figure - Nitro Sprayers	30
Figure - Nitro Orbitrol	31
Figure - Nitro Valve position	31
Figure - Hardi Alpha	32
Figure - Walker Sprayers	34
Figure- JCB steering hardware	36
Figure- JCB actuation chain	36
Figure - Tees into system at steering valve	38
Figure - Tees into system at steering valve	38
Figure - Load sense between cab and power beyond	39
Figure - Disable pressure switch	40
Figure - Pressure switch location	40
Figure- CR series harvesters	40
Figure - CR series harvester	41
Figure - CR series harvester	41

1.0 Introduction

This manual contains hydraulic information about various machine models.

Information could include fittings size and quantity, hydraulic schematic and photos of installations.

Warning

This manual is only designed to be a guide, if you are in any doubt on how to fit the Autosteer hydraulic valve, contact Farmscan or Prime Hydraulics (Phone (08) 9470 4844) before commencing installation.

FARMSCAN endeavour to keep this information as accurate as possible, but as the manufacturing, assembly, machine options and fitting of valve are out of our control, some information may not be accurate for every situation.

For machines not included in this manual obtain the manufacturers hydraulic information and contact Farmscan or Prime Hydraulics (Phone (08) 9470 4844)

1.1 General information

- 1 Obtain the manufacturers hydraulic information before commencing install.
- 2 Mount the valve in a position that allows the adjustments to be reached.
- 3 Mount the valve and hoses so they don't rub against each other.

2.0 John Deere 9000 Series 4WD

2.1 Description

The 9000 series John Deere 4WD tractors are a standard Pressure/load sense system. The hoses can be installed as per the diagram. The tractor is very compact so there is

not a lot of room to work in. The valve can be mounted in the articulation point, or on the side of the engine bay, the latter is usually used when the tractor is fitted with the optional PTO

Because the orbitrol is not easy to get to, short hoses are attached to the orbitrol and "Tee's" attached to these. This allows the pressure and tank hoses to be attached. The Left and Right hoses are attached to the steering rams as in Figure 5.

The load sense has to go through the Autosteer Valve. i.e. Take the sense line off the orbitrol and connect it to the PS port, a new hose is connected from the OS port on the Autosteer Valve back to the orbitrol.

NB: If using a hydromotor, these systems ramp up the hydraulic standby pressure. This will require the hydraulic disable switch to be readjusted to compensate.

2.2 Hydraulic diagram

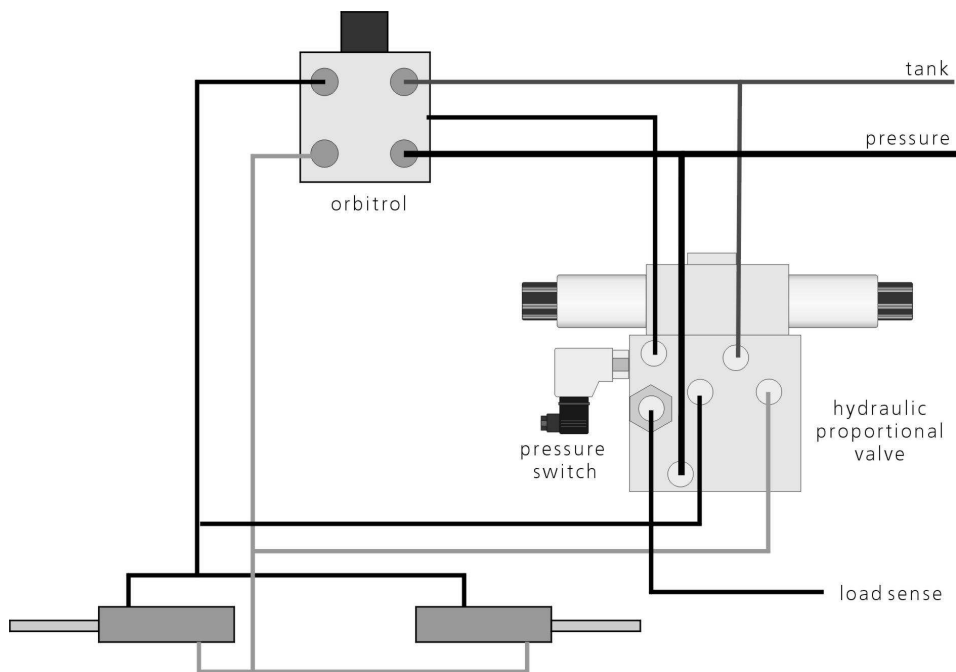


Figure 1-JD 9000 Series

2.3 Fittings list

2.4 Kit Number

5400S/STAND

2.5 Illustrations

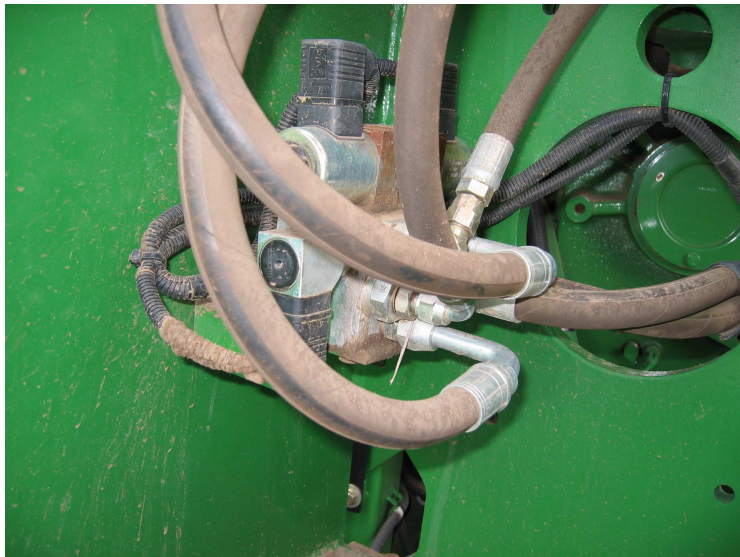


Figure 2-Valve mounted in articulation point



Figure 3- Showing "Tee's" into hoses for pressure and tank

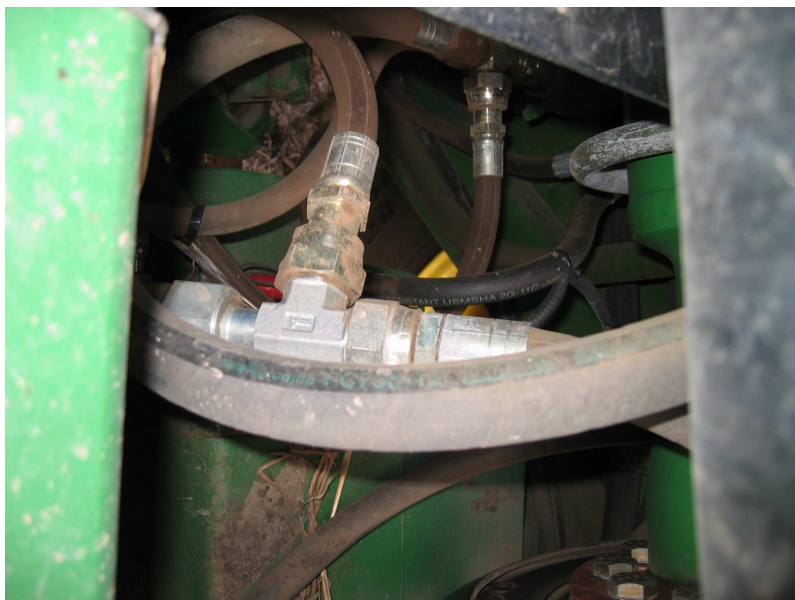


Figure 4- Another Showing "Tee's" into hoses for pressure and tank



Figure 5- Teeing into the steering rams

3.0 John Deere 8000 Series FWA

3.1 Description

The 8000 series FWA utilizes the Power beyond kit on the rear of the tractor. Load sense pressure and tank are connected to this kit. The top of the valve stack has to be removed to install a small shuttle valve under the load sense outlet. This valve stack has to be spotlessly clean prior to removing the top. Be careful that no sections move while removing the top. The hydraulic disable switch is removed from the valve and the port is plugged. The hydraulic disable switch is installed on a test port on the JD steering valve (Orbitrol) using the adapter in kit (See image). The left and right hoses from the Autosteer Valve are plumbed into the JD left and right hoses at the front of the cab, on the left hand side using "Tee"s "

3.2 Hydraulic diagram

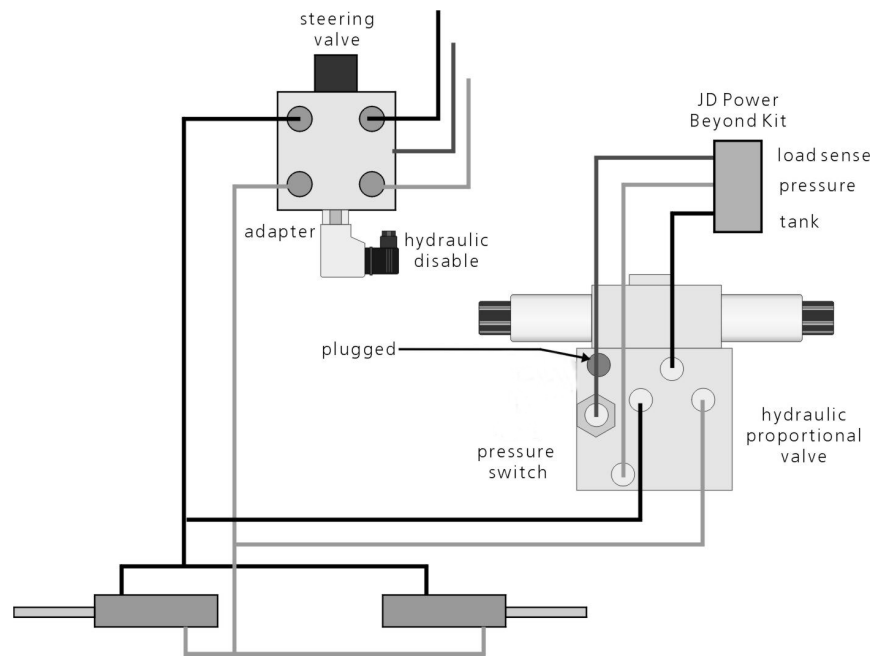


Figure - JD FWA

3.3 Fittings list

3.4 Kit Number

5400S/JD8000

3.5 Illustrations

4.0 John Deere 4700 SP Sprayers

4.1 Description

The John Deere SP sprayers are a pressure/flow compensated system. The Autosteer valve can be plumbed in by "Teeing" into the 4 hoses on the orbitrol. i.e. The Pressure, Tank, Left, and Right.

The load sense has to go through the Autosteer Valve. i.e. Take the sense line off the orbitrol and connect it to the PS port, a new hose is connected from the OS port on the Autosteer Valve back to the orbitrol.

4.2 Hydraulic diagram

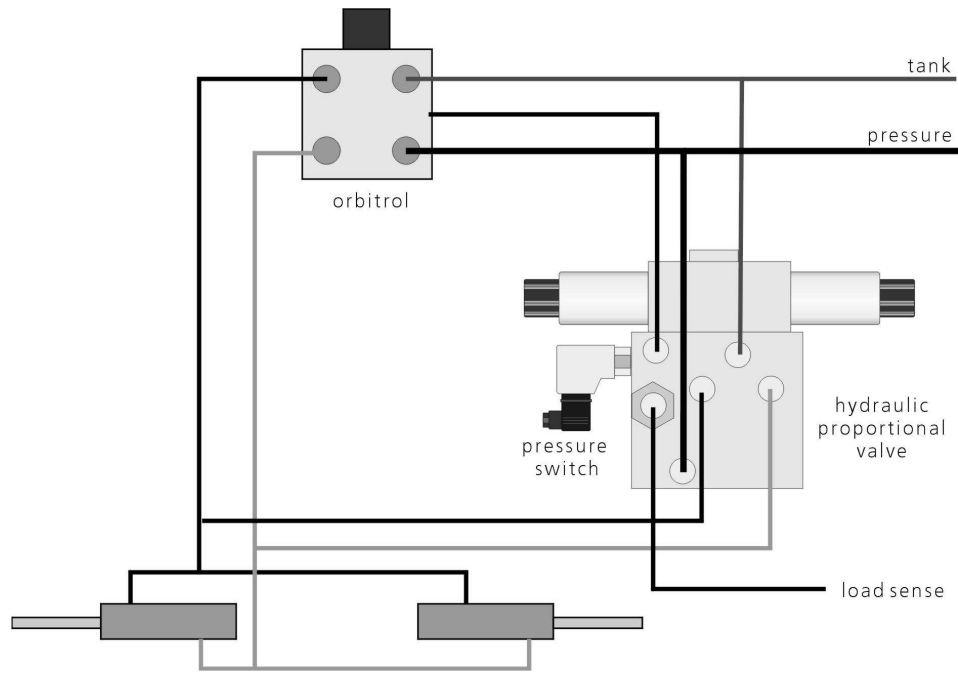


Figure -John Deere SP Sprayers

4.3 Fittings list

4.4 Kit Number

5400S/STAND

4.5 Illustrations

5.0 John Deere 9000 Series Harvesters

5.1 Description

The 9000 series harvesters have a closed centre steering system. You have to use a flow divider valve to supply oil to the steering valve. Failure to plum this system up correctly can result in pump damage. See the diagram below for plumbing.

5.2 Hydraulic diagram

5.5 Illustrations

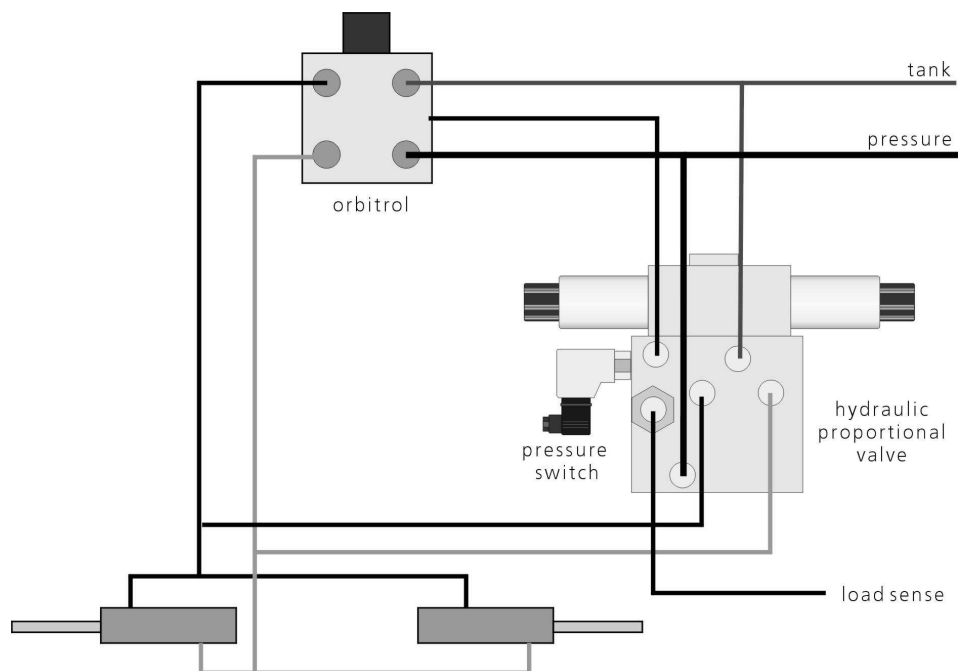
6.0 Case STX 4WD

6.1 Description

The Case STX 4WDs are a pressure/flow compensated system. There is ample room around the orbitrol for installation. The Autosteer valve can be plumbed in by "Teeing" into the 4 hoses on the orbitrol. i.e. The Pressure, Tank, Left, and Right.

The load sense has to go through the Autosteer Valve. i.e. Take the sense line off the orbitrol and connect it to the PS port, a new hose is connected from the OS port on the Autosteer Valve back to the orbitrol. The Left and Right can also be plumbed straight to the steering rams.

6.2 Hydraulic diagram



6.3 Fittings list

Orbitrol fittings

2 X 13/16 O-ring Face for Pressure and Tank

2 X 1-3/16 O-ring Face for left and right Steering Rams

Steering Valve ports

4 X 9/16 UNO Main ports

2 X 7/16 UNO sense line ports

6.4 Kit Number

5400S/STAND

6.5 Illustrations



Figure - Case STX 4WD

Shows the Autosteer system Tee'd in at the orbitrol. This also shows the valve mounted at the front of the cab just behind orbitrol.

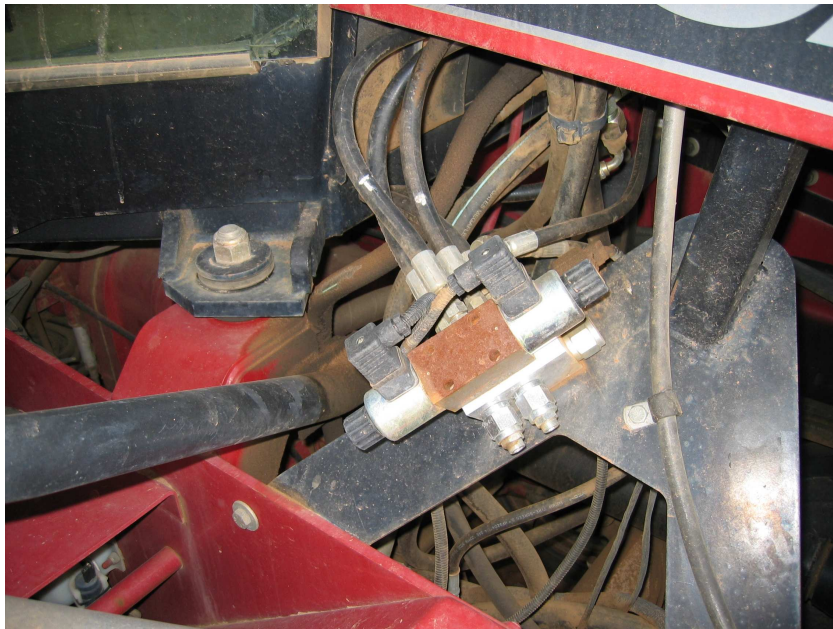


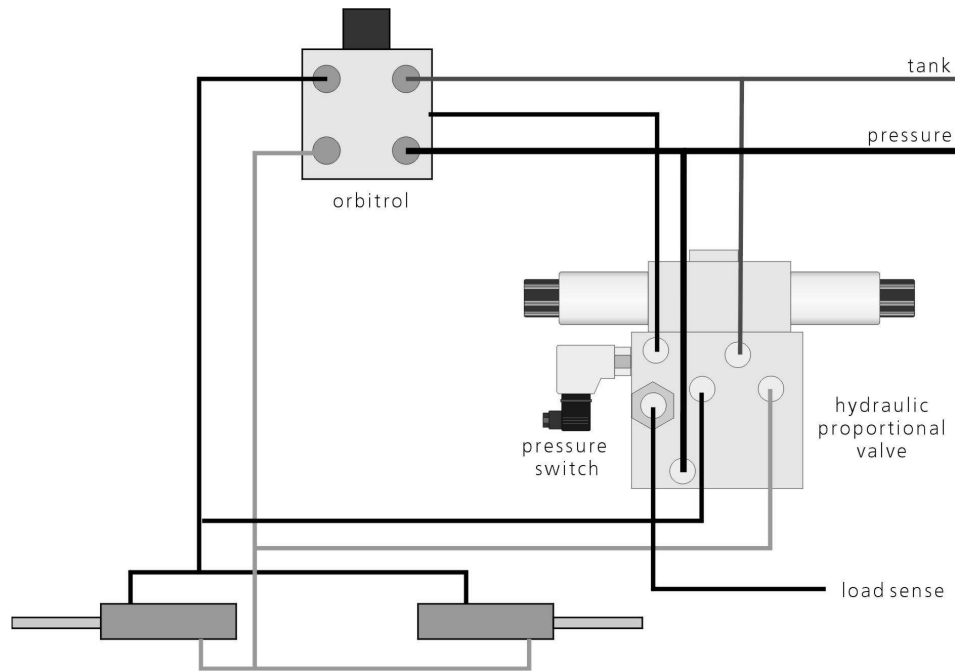
Figure - Valve mounting STX under bonnet

7.0 Case MX Series FWA

7.1 Description

The Case MX is a standard pressure/flow compensated system. Some of these tractors have the fittings "made onto the hoses on the orbitrol. There is a proprietary quick release coupler. If this is the case you will have to "tee" into the system under the cab.

7.2 Hydraulic diagram



7.3 Fittings list

7.4 Kit Number

5400S/STAND

7.5 Illustrations

8.0 Case CVX Series FWA

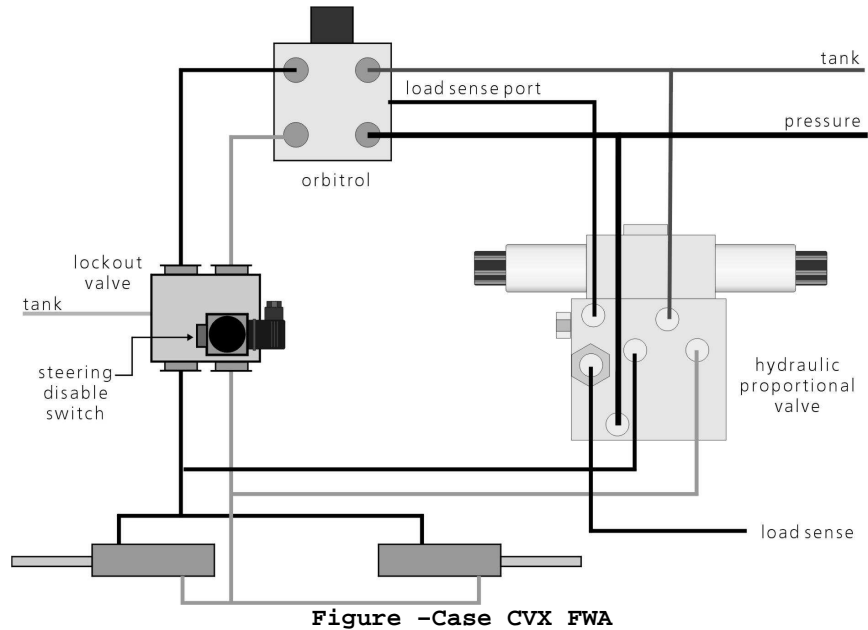
8.1 Description

The CVX is a European tractor, and travels at faster than 40Km/h. Therefore this tractor has what is called "Reactive Steering". This system allows the wheel to self-centre after cornering, just like a car. If left this way the system will allow oil to pressurize the disable switch when in use, and therefore instantly disable the Autosteer.

A lockout valve is fitted to disable this feature and allow the Autosteer to operate.

Some CVX systems have quick couplers on the orbitrol. If this is the case you will have to tee into the system under the cab.

8.2 Hydraulic diagram



8.3 Fittings list

8.4 Kit Number

5400S/STAND/LOCK

8.5 Illustrations



Figure-Case CVX with lockout Valve



Figure-Case CVX with lockout Valve

9.0 CASE SPX self propelled sprayer

9.1 Description

These machines need a lockout valve. They do not have a load sense line.

9.2 Hydraulic diagram

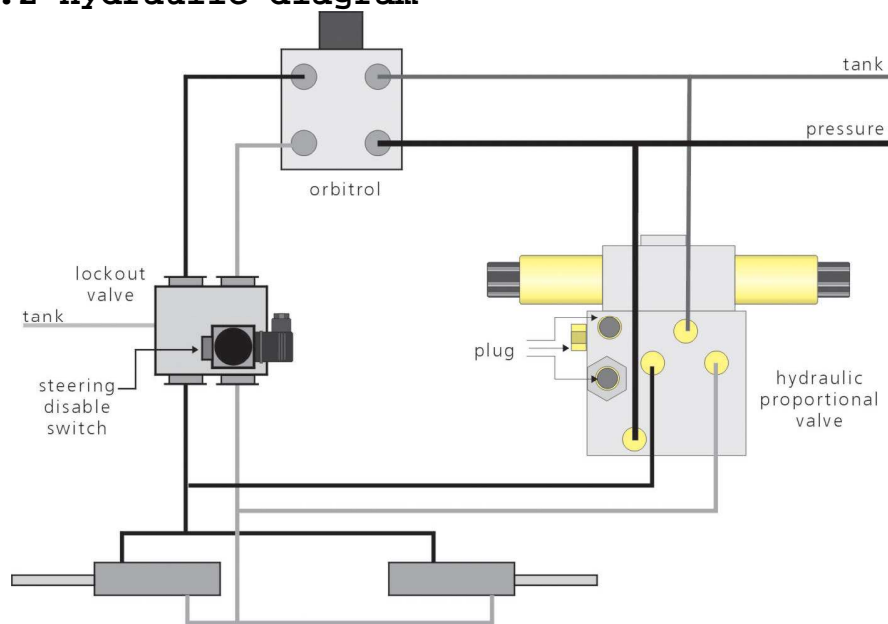


Figure -Case SPX Sprayer

9.3 Fittings list

9.4 Kit Number

5400S/STAND/LOCK

9.5 Illustrations

10.0 2300 Series Harvesters

10.1 Description

These machines are a standard pressure/flow compensated system. There are easy to work on as it is all under the cab in an easy to get to position.

10.2 Hydraulic diagram

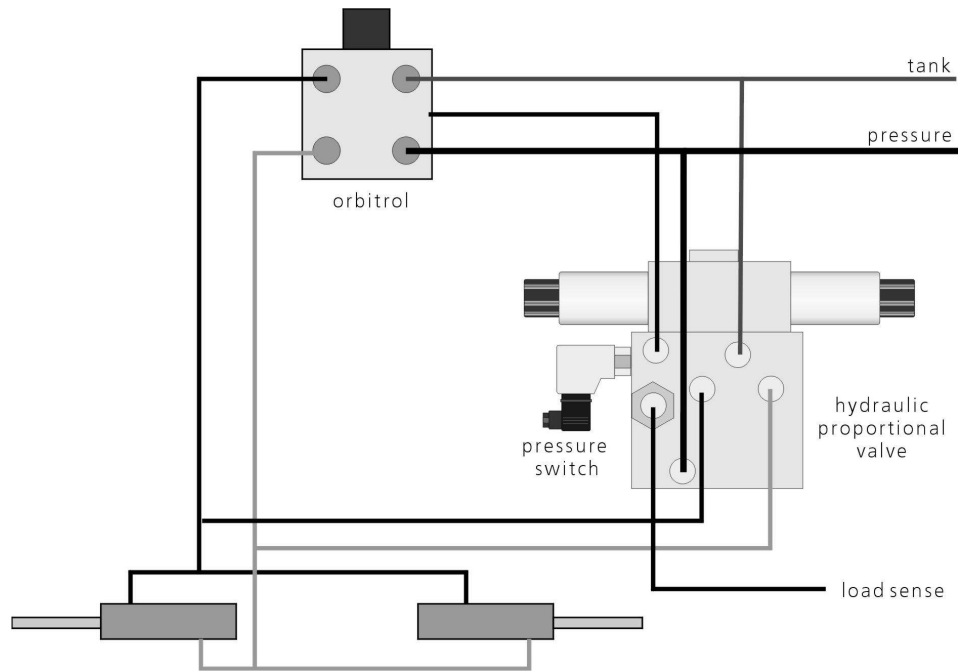


Figure -Case 2300 harvester

10.3 Fittings list

Orbitrol fittings

4 X 3/4 JIC for main ports
1 X 7/16 for load sense

Steering Valve ports

4 X 9/16 UNO Main ports
2 X 7/16 UNO sense line ports

10.4 Kit Number

5400S/STAND

10.5 Illustrations

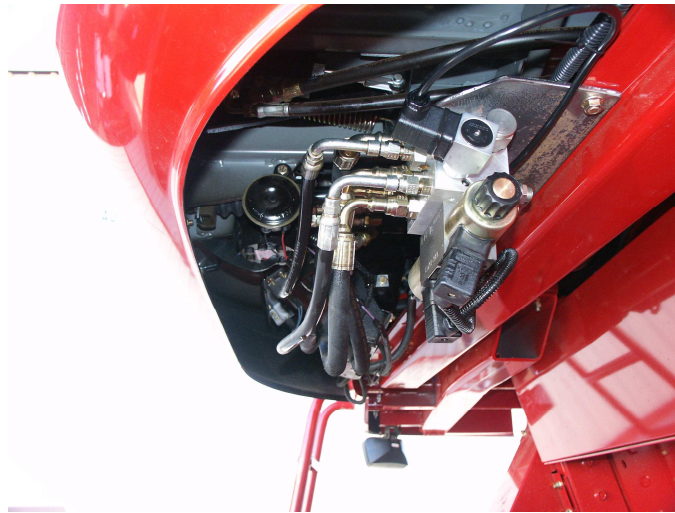


Figure-Case 2300 series

11.0 Case AFX Harvesters

11.1 Description

The steering system on the AFX series is a standard pressure/flow compensated system. There is plenty of room under the cab to install the necessary hoses and valves.

11.2 Hydraulic diagram

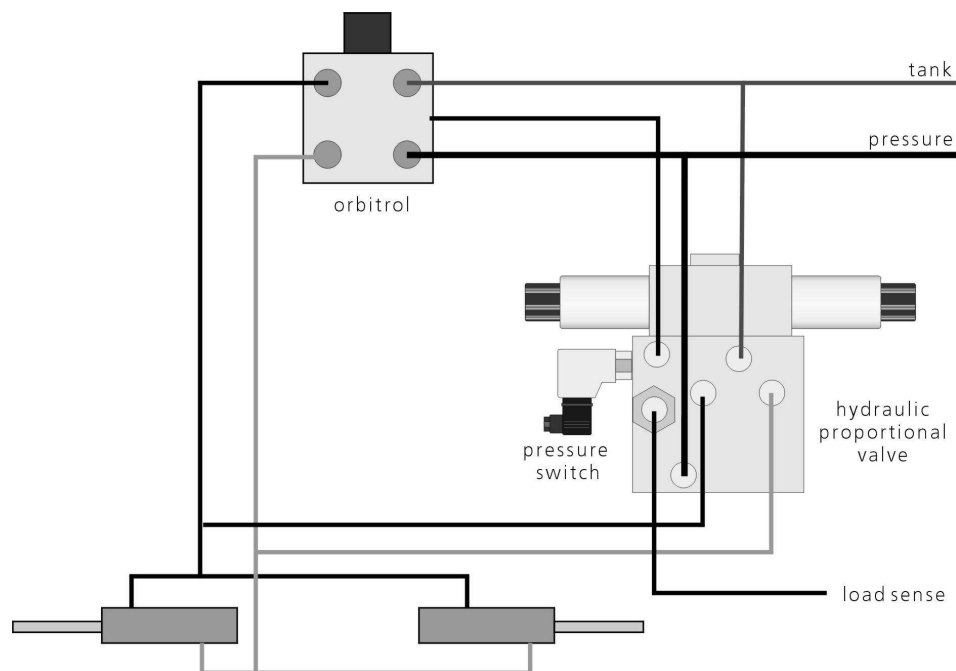


Figure- Case AFX

11.3 Fittings list

Orbitrol fittings

4 X 13/16 O-ring Face for main ports
1 X 9/16 O-ring Face for load sense

Steering Valve ports

4 X 9/16 UNO Main ports
2 X 7/16 UNO sense line ports

11.4 Kit Number

5400S/STAND

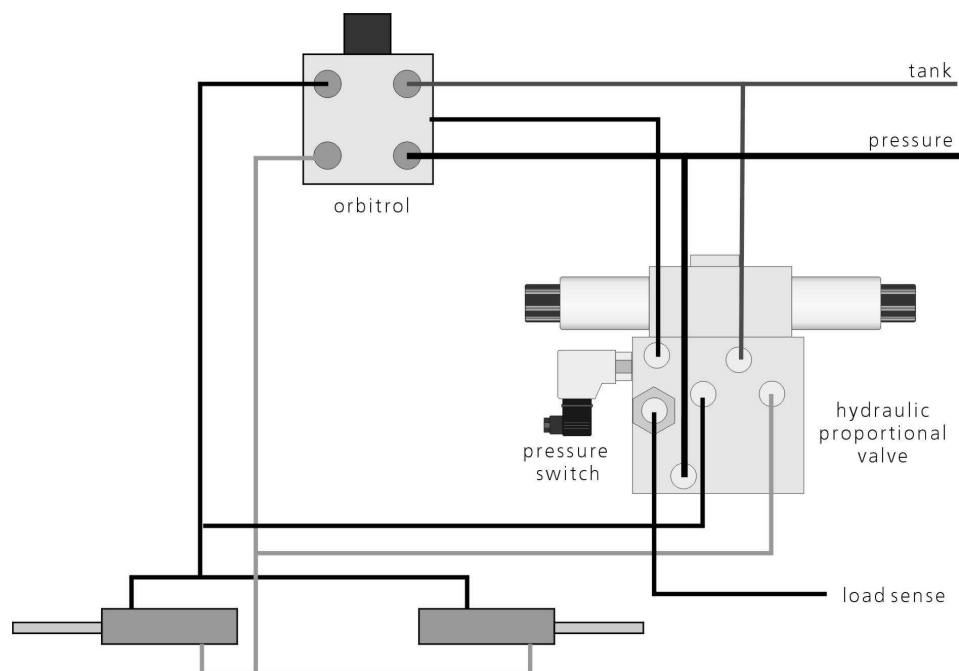
11.5 Illustrations

2.0 New Holland TJ Series 4WD

12.1 Description

These are a standard pressure/flow compensated system. There is ample room in which to work while installing the 4 Tee's into the system at the orbitrol.

12.2 Hydraulic diagram



12.3 Fittings list

Orbitrol fittings

2 X 13/16 O-ring Face for Pressure and Tank

2 X 1-3/16 O-ring Face for left and right Steering Rams

Steering Valve ports

4 X 9/16 UNO Main ports

2 X 7/16 UNO sense line ports

12.4 Kit Number

5400S/STAND

12.5 Illustrations

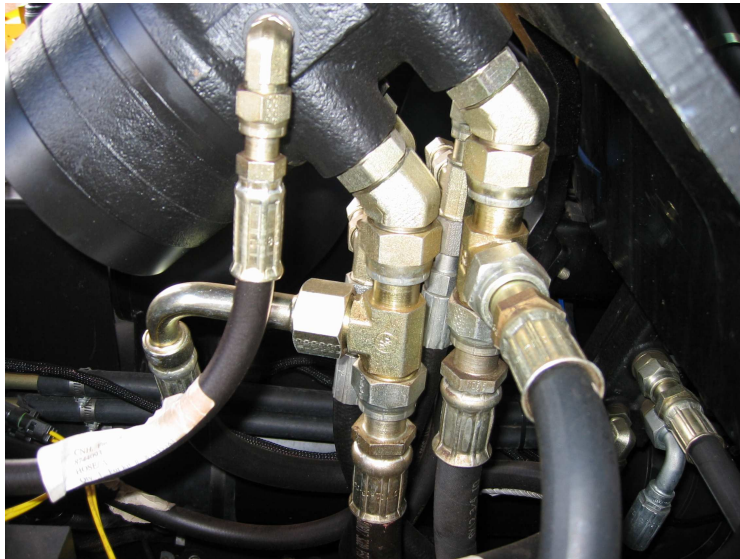


Figure-TJ series

13.0 New Holland TG Series FWA

13.1 Description

13.2 Hydraulic diagram

13.3 Fittings list

13.4 Illustrations

14.0 New Holland TM Series FWA

14.1 Description

14.2 Hydraulic diagram

14.3 Fittings list

14.4 Illustrations

15.0 New Holland TR Series Harvesters

15.1 Description

The steering system on the TR series harvesters is an open centre system. You have to have an extra flow control valve. There is plenty of room to access the orbitrol valve. The fittings are all JIC (See fittings list)

15.2 Hydraulic diagram

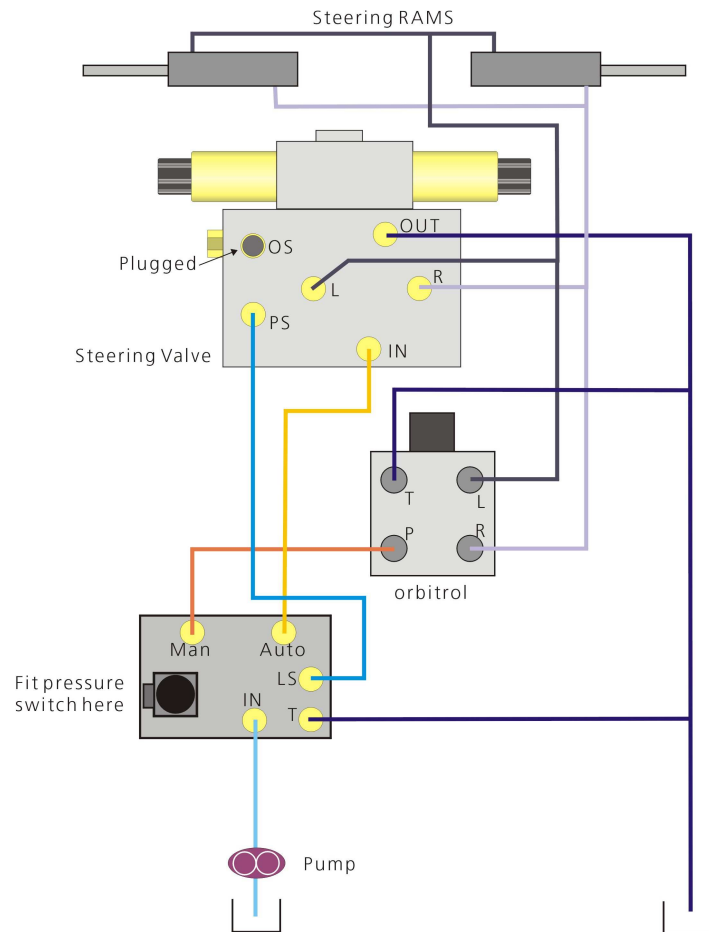


Figure-New Holland TR

15.3 Fittings list

Orbitrol fittings

4 X 9/16 JIC

Steering Valve ports

4 X 9/16 UNO Main ports

2 X 7/16 UNO sense line ports

Flow Control Valve

4 X 9/16 UNO Main ports

2 X 7/16 UNO sense line ports

15.4 Kit Number

5400S/STAND/LOCK

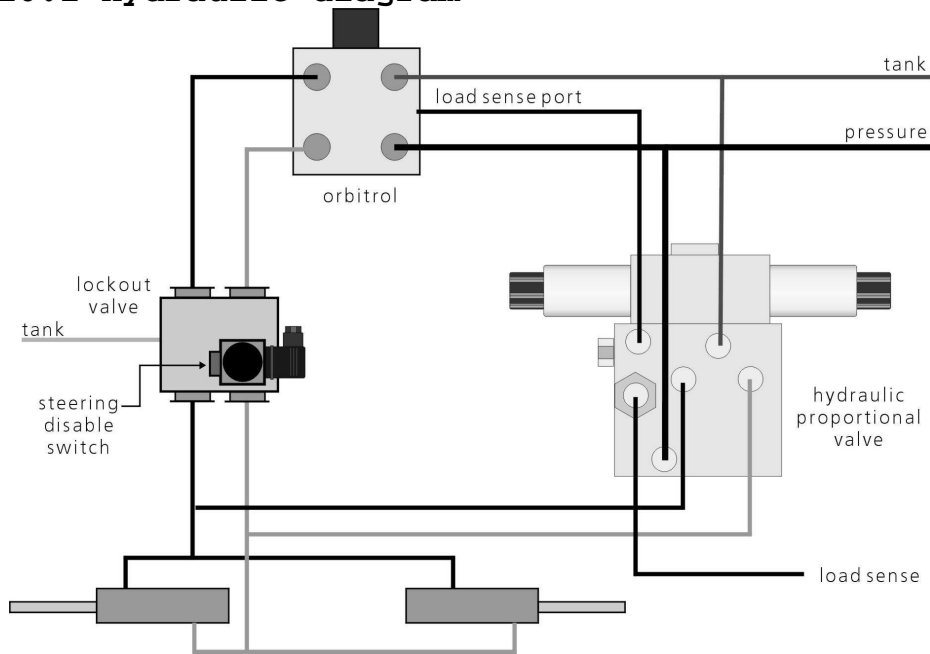
15.5 Illustrations

16.0 Fendt 900 Series

16.1 Description

The Fendt system is a reactive steering system, much like the CVX ase system. You have to use a lock-out valve to disable the reactive steering otherwise the system will immediately get disabled as soon as you hit the Autosteer button.

16.2 Hydraulic diagram



16.3 Fittings list

German metric

Pressure, Return, Left and Right 22 mm Metric fittings,
15mm steel pipe.

Load Sense 14mm fittings 8mm steel pipe

16.4 Kit Number

5400S/STAND/LOCK

16.5 Illustrations



Figure-Pressure and flow from under tractor



Figure - Left and right to the lockout valve

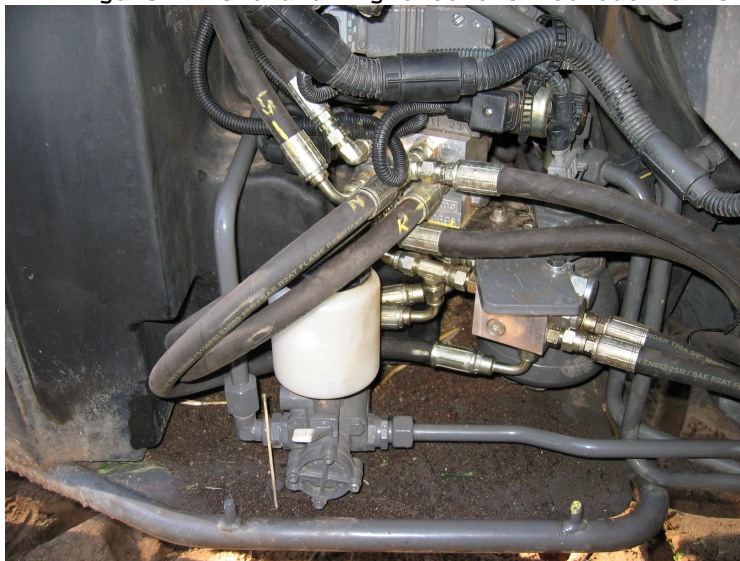


Figure- Steering and lockout valve in behind tractor hydraulics cover. RHS of tractor



Figure- Load sense

17.0 Nitro SP Sprayers

17.1 Description

The Nitro Sprayers are a standard pressure/flow compensated system. The orbitrol has easy access from the underneath the machine. "Tee" into the 4 hoses at the orbitrol, pressure, tank, left and right.

17.2 Hydraulic diagram

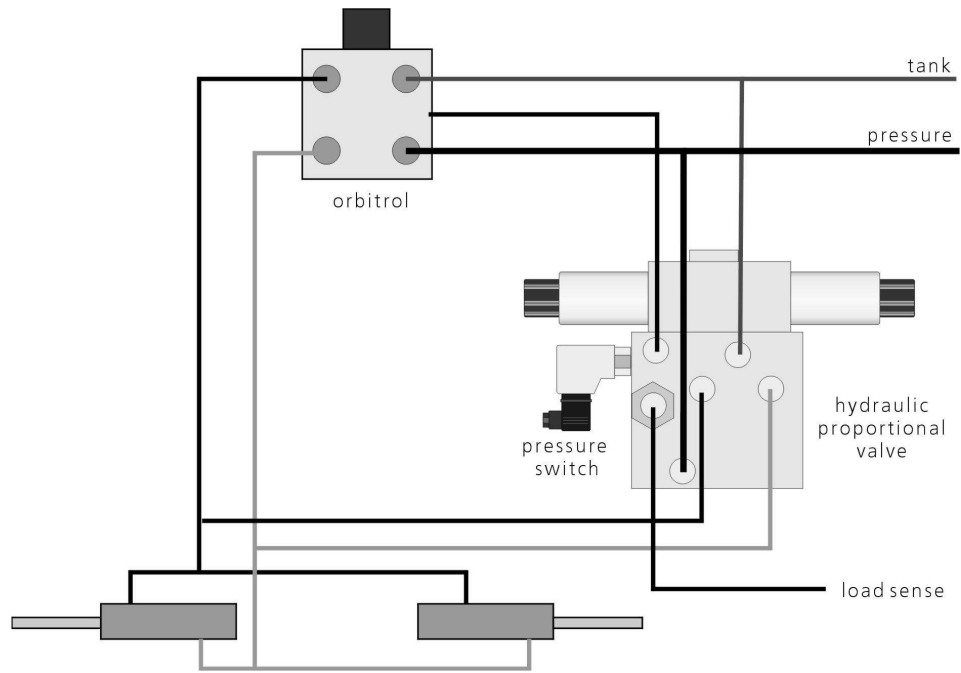


Figure - Nitro Sprayers

17.3 Fittings list

17.4 Kit Number

5400S/STAND

17.5 Illustrations

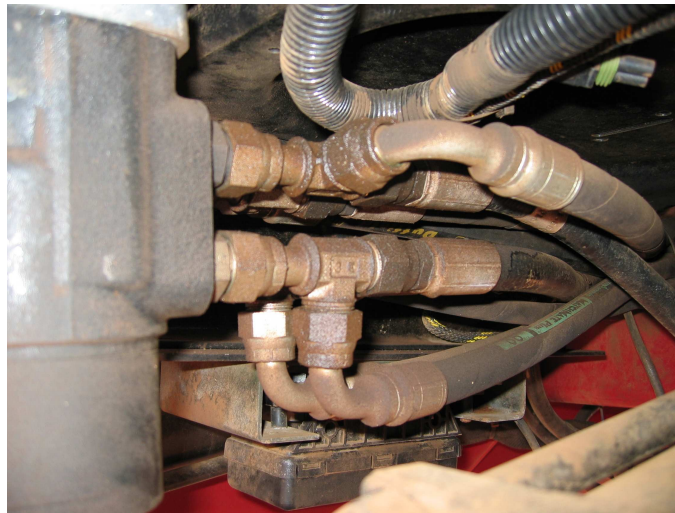


Figure - Nitro Orbitrol

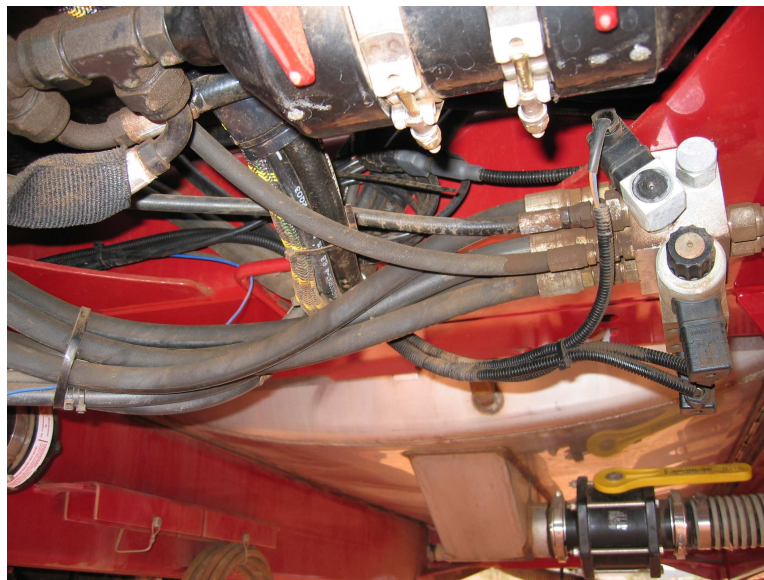


Figure - Nitro Valve position

16.0 Hardi Alpha

18.1 Description

The Hardi Alpha is a dynamic load sense system. This means that the load sense works in the reverse direction of what we call the standard load sense system.

On the Hardi system the load sense is removed from the orbitrol and connected to the OS port on the steering valve, the PS port on the valve is connected to the orbitrol. The hydraulic disable switch is "Tee'd" into the line from the PS port to the orbitrol. The disable switch port on the steering valve is the plugged.

18.2 Hydraulic diagram

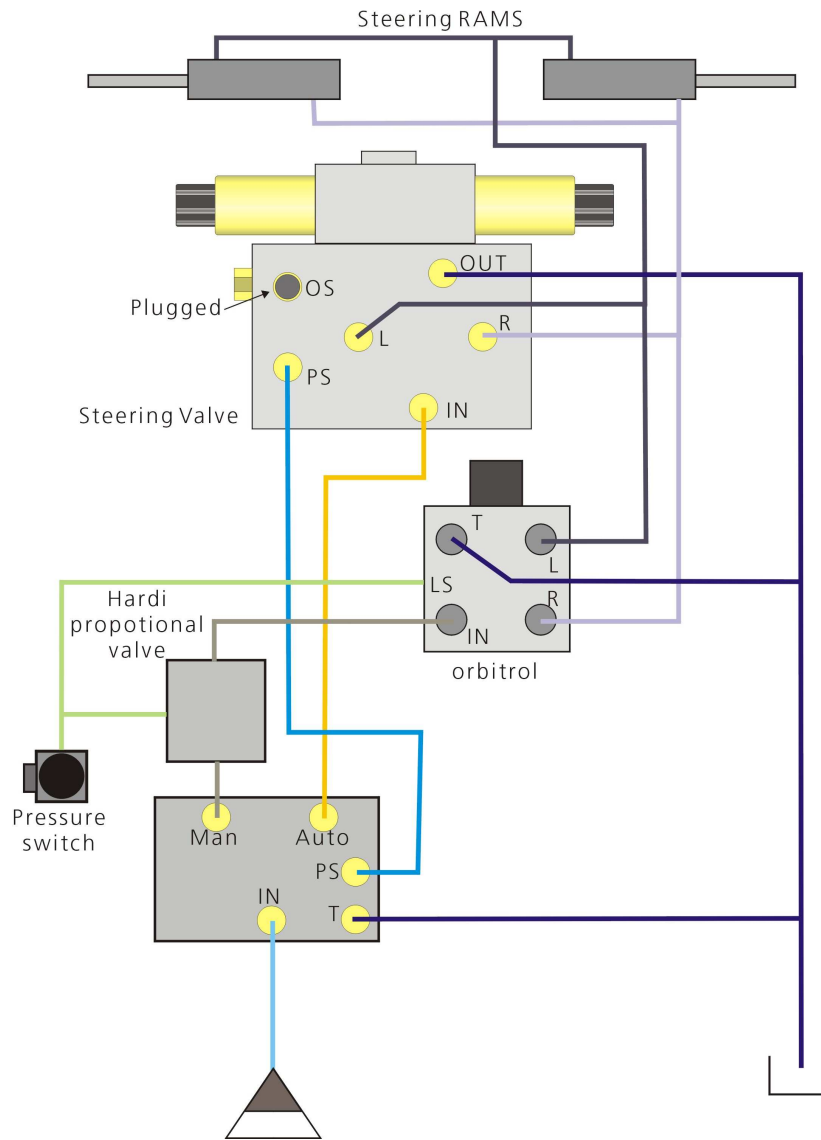


Figure - Hardi Alpha

18.3 Fittings list

18.4 Kit Number

5400S/STAND/FLOW

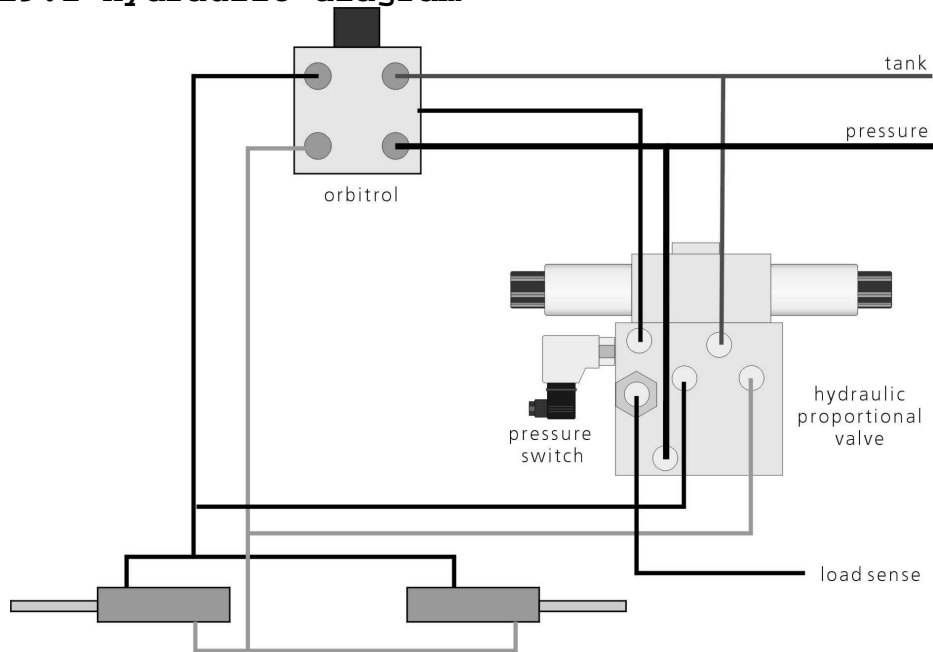
18.5 Illustrations

19.0 AGCO Gleaner harvesters

19.1 Description

The Gleaner steering system is a standard pressure flow compensated system. The Orbitrol is easy to get to under the cab. One of the lines into the orbitrol is a different size; this is so the pressure and return cannot be reversed.

19.2 Hydraulic diagram



19.3 Fittings list

Orbitrol fittings

3 X 9/16 JIC

1 X 3/4 JIC

Sense line

1 X 7/16 JIC

Steering Valve ports

4 X 9/16 UNO Main ports

2 X 7/16 UNO sense line ports

19.4 Kit Number

5400S/STAND

19.5 Illustrations

20.0 Walker Sprayers

20.1 Description

The Walker Sprayers are a standard Pressure/Flow compensated system. The orbitrol has easy access from under the machine. "Tee" into the 4 hoses on the orbitrol, Pressure, Tank, Left and Right.

20.2 Hydraulic diagram

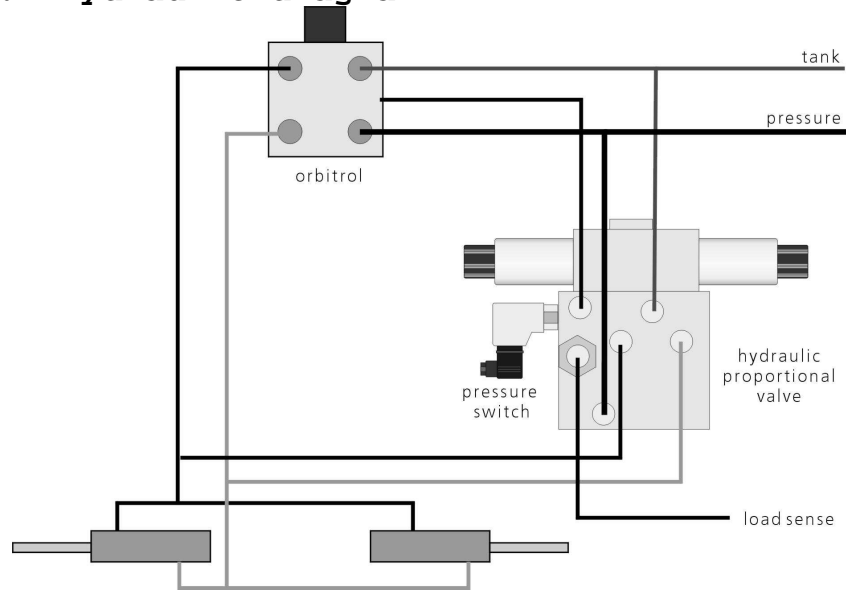


Figure - Walker Sprayers

20.3 Fittings list

20.4 Kit Number

5400S/STAND

20.5 Illustrations

21.0 JCB Tractors

21.1 Description

The JCB steering system is like a truck or car, it has a direct link from the steering wheel to the steering box. With this system we have to mechanically turn the steering shaft. This is done by adding the JCB steering hardware. This hardware kit will contain all the hydraulic and mechanical parts needed to Autosteer a JCB.

21.2 Hydraulic diagram

These instruction are contained in the hardware kit .

21.3 Fittings list

No fittings are needed. All should be contained in the kit.

21.4 Illustrations

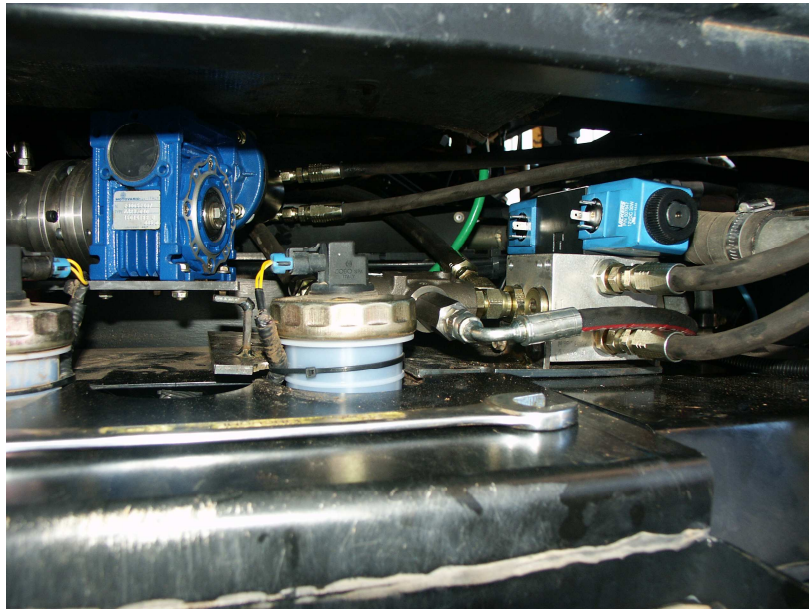


Figure- JCB steering hardware



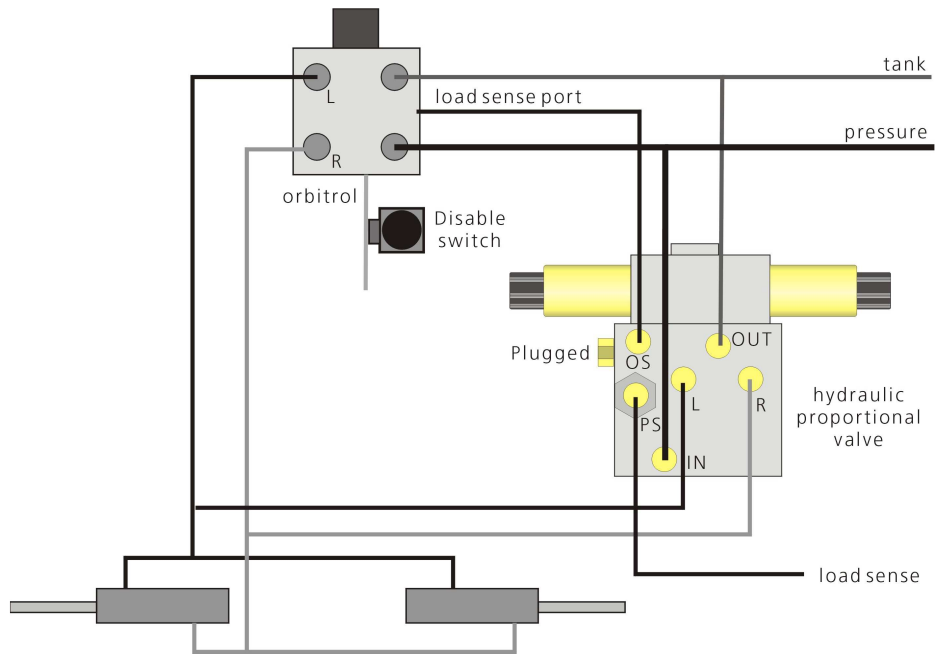
Figure- JCB actuation chain

22.0 John Deere 7000/20 Series FWA

22.1 Description

The 7000/20 Series is different to the first 7000 series JD's to be released. To tap into the system you use 4 "Tees" on the pipes that connect to the steering valve. See illustrations. Remove the cover on the left-hand side, close to the cab to gain access to steering valve. The disable switch is taken out of the valve and connects into the load sense line. Remove the exhaust heat cover on the right hand side close to the cab to gain access. See illustrations. The load sense is spliced into the system at the rear of the machine between the cab and the "Power Beyond Kit" See illustrations.

22.2 Hydraulic diagram



22.3 Fittings list

22.4 Kit Number

5400S/STAND

22.5 Illustrations

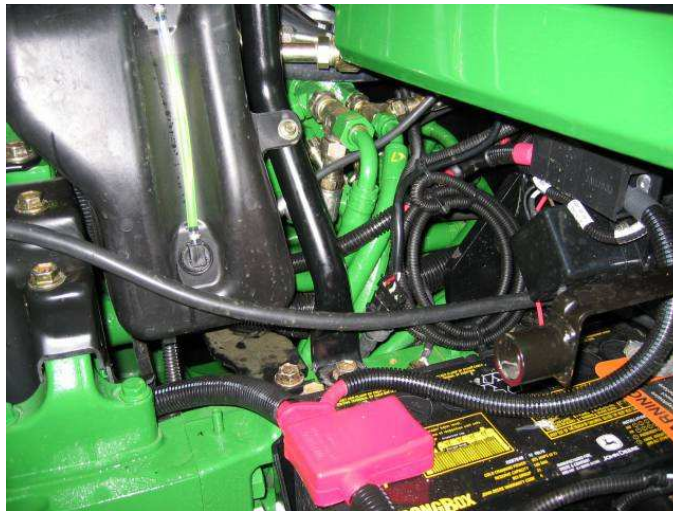


Figure - Tees into system at steering valve



Figure - Tees into system at steering valve



This

Was connected here

Figure - Load sense between cab and power beyond

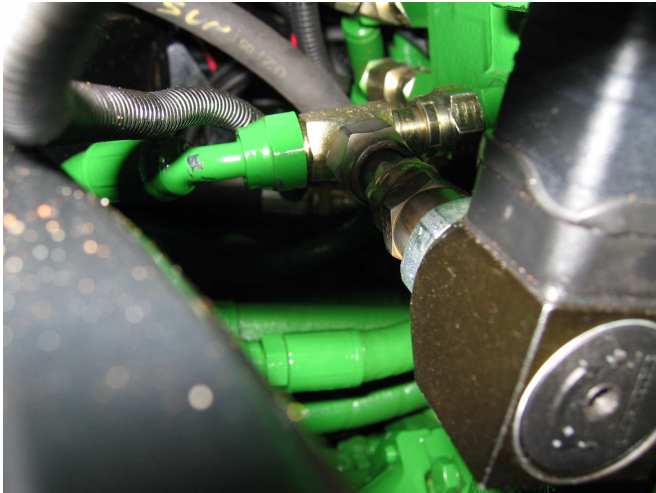


Figure - Disable pressure switch

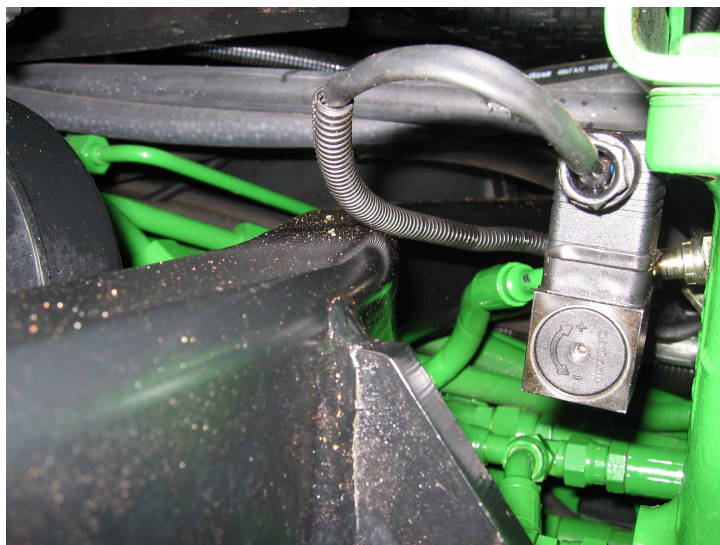


Figure - Pressure switch location

23.0 New Holland CR Series Harvesters

23.1 Description

The steering system on the CR series is a standard pressure/flow compensated system. There is plenty of room under the cab to install the necessary hoses and valves.

23.2 Hydraulic diagram

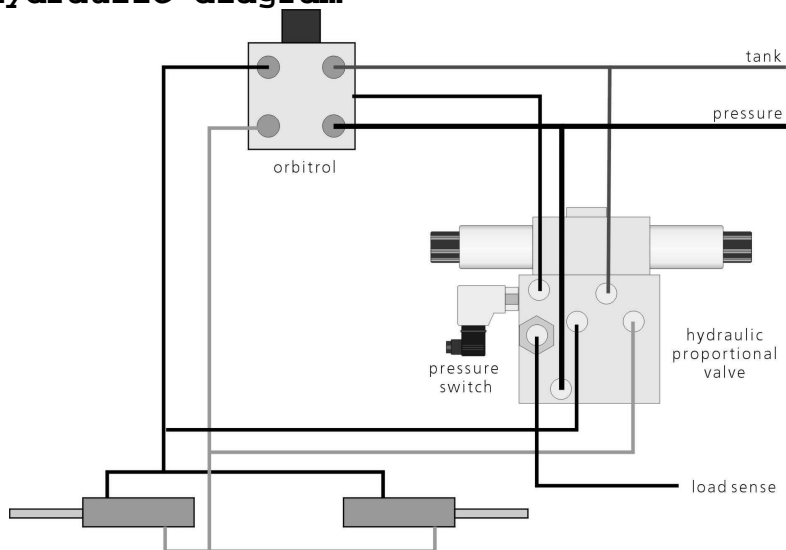


Figure- CR series harvesters

23.3 Fittings list

Orbitrol fittings

- 4 X 13/16 O-ring Face for main ports
- 1 X 9/16 O-ring Face for load sense

Steering Valve ports
4 X 9/16 UNO Main ports
2 X 7/16 UNO sense line ports

23.4 Kit Number

5400S/STAND

23.4 Illustrations

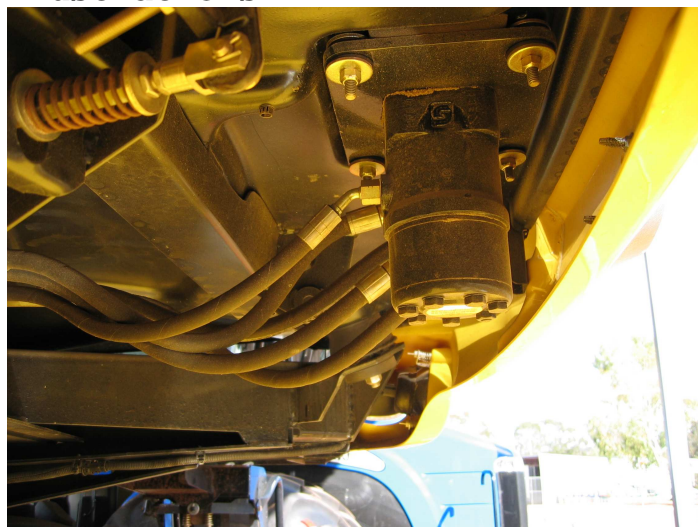


Figure - CR series harvester

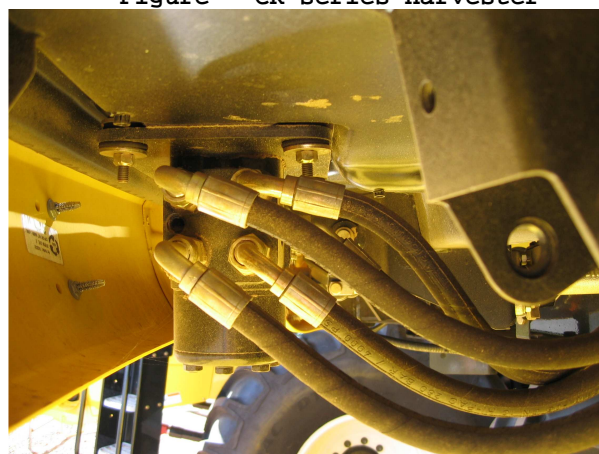


Figure - CR series harvester

24 Safety and training

1. Ensure that all safety and information decals are fitted and visible.
2. Ensure that all people who will be operating the machine have been adequately trained.
3. Only trained operators are to operate the machine.
4. When transporting the machine ensure that the emergency over-ride button is pressed in and that the red indicator light has gone out.

25 Support

For any enquiries regarding the performance of your Guidance System please contact:

Farmscan Service Centre
Phone 08 9470 1177
A/H you will be directed to a
service staff member

Farmscan
6 Sarich Way, Bentley, WA, 6102
Tel: (08) 9470 1177 Fax: (08) 9470 2855
E-mail: service@farmscan.net.au
www.farmscan.net

